



PTO/SB/21 (05-03)

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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

| | | | |
|--|------------------|------------------------|--------------|
| Application Number | 10/616,482 | | |
| Filing Date | July 8, 2003 | | |
| First Named Inventor | Behzad IMANI | | |
| Art Unit | Not Yet Assigned | | |
| Examiner Name | Not Yet Assigned | | |
| Total Number of Pages in This Submission | 8 + 12 ref. | Attorney Docket Number | 544952000100 |

ENCLOSURES (check all that apply)

| | | |
|--|---|--|
| <input type="checkbox"/> Fee Transmittal Form | <input type="checkbox"/> Drawing(s) | <input type="checkbox"/> After Allowance Communication to Group |
| <input type="checkbox"/> Fee Attached | <input type="checkbox"/> Licensing-related Papers | <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences |
| <input type="checkbox"/> Amendment/Reply | <input type="checkbox"/> Petition | <input type="checkbox"/> Appeal Communication to Group (Appeal Notice, Brief, Reply Brief) |
| <input type="checkbox"/> After Final | <input type="checkbox"/> Petition to Convert to a Provisional Application | <input type="checkbox"/> Proprietary Information |
| <input type="checkbox"/> Affidavits/declaration(s) | <input type="checkbox"/> Power of Attorney, Revocation Change of Correspondence Address | <input type="checkbox"/> Status Letter |
| <input type="checkbox"/> Extension of Time Request | <input type="checkbox"/> Terminal Disclaimer | <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): |
| <input type="checkbox"/> Express Abandonment Request | <input type="checkbox"/> Request for Refund | 1. Form PTO-1449 (2 pages) citing seventeen (17) references + duplicate copy |
| <input checked="" type="checkbox"/> Information Disclosure Statement (3 pages) | <input type="checkbox"/> CD, Number of CD(s) _____ | 2. Copies of twelve (12) non patent documents |
| <input type="checkbox"/> Certified Copy of Priority Document(s) | | 3. Return Receipt Postcard |
| <input type="checkbox"/> Response to Missing Parts/Incomplete Application | Remarks | |
| <input type="checkbox"/> Response to Missing Parts under 37 CFR 1.52 or 1.53 | | |

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

| | | |
|-------------------------|---|-------|
| Firm or Individual name | MORRISON & FOERSTER LLP Norman R. Klivans - 33,003 | 25226 |
| Signature | | |
| Date | September 23, 2003 | |

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

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Signature:

(Darci Sakamoto)



PATENT
Docket No. 544952000100

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Darci Sakamoto

Darci Sakamoto

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the application of:

Behzad IMANI and Mark L.
BRONGERSMA

Serial No.: 10/616,482

Filing Date: July 8, 2003

For: FAR-FIELD MEASUREMENT OF
PROPERTIES OF METALLIC THIN
FILMS

Examiner: Not Yet Assigned

Group Art Unit: Not Yet Assigned

INFORMATION DISCLOSURE
STATEMENT UNDER 37 C.F.R. § 1.97 & 1.98

Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. § 1.97 and § 1.98, Applicant submits for consideration in the above-identified application the documents listed on the attached Form PTO-1449. Pursuant to the USPTO notice dated July 11, 2003, waiving the requirement under 37 C.F.R. § 1.98 (a)(2)(i) to provide copies of U.S. Patents and U.S. Published Applications, copies of those references numbered 1 through 5 are not submitted. Copies of non-patent literature are submitted herewith in accordance with 37 C.F.R. § 1.98 (a)(2). The Examiner is requested to make these documents of record.

This Information Disclosure Statement is submitted:

- ☐ With the application; accordingly, no fee or separate requirements are required.
- ☐ Before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.
- ☒ Within three months of the application filing date or before mailing of a first Office Action on the merits; accordingly, no fee or separate requirements are required.
- ☐ After receipt of a first Office Action on the merits but before mailing of a final Office Action or Notice of Allowance.
 - ☐ A fee is required. A check in the amount of __ is enclosed.
 - ☐ A fee is required. Accordingly, a Fee Transmittal form (PTO/SB/17) is attached to this submission in duplicate.
 - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below; accordingly; no fee is believed to be due.
- ☐ After mailing of a final Office Action or Notice of Allowance, but before payment of the issue fee.
 - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a check in the amount of __ is enclosed.
 - ☐ A Certification under 37 C.F.R. § 1.97(e) is provided below and a Fee Transmittal form (PTO/SB/17 is attached to this submission in duplicate.)

Applicants would appreciate the Examiner initialing and returning the Form PTO-1449, indicating that the information has been considered and made of record herein.


The information contained in this Information Disclosure Statement under 37 C.F.R. § 1.97 and § 1.98 is not to be construed as a representation that: (i) a complete search has been made; (ii) additional information material to the examination of this application does

not exist; (iii) the information, protocols, results and the like reported by third parties are accurate or enabling; or (iv) the above information constitutes prior art to the subject invention.

In the unlikely event that the transmittal form is separated from this document and the Patent Office determines that an extension and/or other relief is required, Applicants petition for any required relief including extensions of time and authorize the Assistant Commissioner to charge the cost of such petitions and/or other fees due in connection with the filing of this document to **Deposit Account No. 03-1952** referencing 544952000100. However, the Assistant Commissioner is not authorized to charge the cost of the issue fee to the Deposit Account.

Dated: September 23, 2003

Respectfully submitted,

By: 
Norman K. Klivans, Jr.
Registration No. 33,003

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Form PTO-1449

Docket Number 544952000100

Application Number 10/616,482

**INFORMATION DISCLOSURE CITATION
ON AN APPLICATION**

Applicant

Behzad IMANI and Mark L. BRONGERSMA

Filing Date July 8, 2003

Group Art Unit Not Yet Assigned

Mailing Date September 23, 2003

SEP 26 2003

(Use several sheets if necessary)

U.S. PATENT DOCUMENTS

| Examiner Initials | Ref. No. | Date | Document No. | Name | Class | Subclass | Filing Date If Appropriate |
|-------------------|----------|------------|--------------|---------------|-------|----------|----------------------------|
| | 1. | 05/27/1997 | 5,633,711 | Nelson et al. | | | |
| | 2. | 11/09/1999 | 5,982,482 | Nelson et al. | | | |
| | 3. | 01/18/2000 | 6,016,202 | Fuchs et al. | | | |
| | 4. | 06/13/2000 | 6,075,602 | Fuchs et al. | | | |
| | 5. | 01/16/2001 | 6,175,421 | Fuchs et al. | | | |

FOREIGN PATENT DOCUMENTS

| Examiner Initials | Ref. No. | Date | Document No. | Country | Class | Subclass | Translation YES NO |
|-------------------|----------|------|--------------|---------|-------|----------|-----------------------|
| | | | | | | | |

OTHER DOCUMENTS

(including author, title, Date, Pertinent Pages, Etc.)

| Examiner Initials | Ref. No. | Title |
|-------------------|----------|--|
| | 6. | Banet, M. et al. (Date Not Known). "All-Optical, Non-Contact Metrology for Characterising CMP of Copper Films," <i>Semiconductor Fabtech</i> , Eleventh Edition, six pages. |
| | 7. | Banet, M. et al. (Date Not Known). "The Future of Metrology is Optical, Fast and In Situ," <i>Future Fab International</i> , four pages. |
| | 8. | Banet, M.J. et al. (1998). "High-Precision Film Thickness Determination Using a Laser-Based Ultrasonic Technique," <i>Applied Physics Letters</i> 73(2):169-171. |
| | 9. | Duggal, A.R. et al. (1992). "Real-Time Optical Characterization of Surface Acoustic Modes of Polyimide Thin-Film Coatings," <i>J. Appl. Phys.</i> 72(7):2823-2839. |
| | 10. | Krastev, P. et al. (2003). "Modeling of Surface Acoustic Waves in Thin Film Stacks with an Arbitrary Number of Layers (abstract)," <i>Review of Scientific Instruments</i> 74(1):738 |
| | 11. | Maznev, A.A. and Nelson, K.A. (1998). "Optical Heterodyne Detection of Laser-Induced Gratings," <i>Optics Letters</i> 23(16):1319-1321. |
| | 12. | Philips (Date Not Known). "Accurate Non-Contact Measurement of Post-CMP Dishing and Erosion in Damascene Structures," <i>Philips Analytical Brochure</i> , four pages. |
| | 13. | Philips (Date Not Known). "All-Optical Metrology Rapidly Characterizes Copper Damascene Array Structures with Lines Widths Down to 0.07 Micron," <i>Philips Analytical Brochure</i> , two pages. |

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

| | | | |
|--|-----|--|---------------------------------|
| Form PTO-1449 | | Docket Number 544952000100 | Application Number 10/616,482 |
| INFORMATION DISCLOSURE CITATION IN AN APPLICATION SEP 26 2003 Use several sheets if necessary | | Applicant Behzad IMANI and Mark L. BRONGERSMA | |
| | | Filing Date July 8, 2003 | Group Art Unit Not Yet Assigned |
| | | Mailing Date September 23, 2003 | |
| | 14. | Philips (Date Not Known). "Application Note: Measuring Opaque Films Near the Wafer's Edge," <i>Philips Analytical Brochure</i> , two pages. | |
| | 15. | Philips (Date Not Known). "Comparing Metrologies for Copper Metallization: Optoacoustics Versus Four Point Probe," <i>Philips Analytical Brochure</i> , two pages. | |
| | 16. | Reader, A. (2000). "Roadmap Driven Metrology," <i>Metrology</i> , two pages. | |
| | 17. | Rogers, J.A. et al. (1997). "Optical System for Rapid Materials Characterization with the Transient Grating Technique: Application to Nondestructive Evaluation of Thin Films Used in Microelectronics," <i>Appl. Phys. Lett.</i> 71(2):225-227. | |
| | | | |
| EXAMINER: | | DATE CONSIDERED: | |
| EXAMINER: Initial if citation considered, whether or not the citation conforms with MPEP 609. Draw a line through the citation if not in conformance and not considered. Include a copy of this form with next communication to applicant. | | | |
| PTO/SB/ 08 (2-92) pa- 815957 | | Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE | |